

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	84	organic adj fuel adj cell	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT
2	BRS	L2	31	1 and (formic adj acid)	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT
3	BRS	L3	25	2 and "429"/\$.ccls.	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT

	Type	L #	Hits	Search Text	DBs
4	BRS	L4	8	3 and california.as.	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT
5	BRS	L5	6	4 and "M"	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT
6	BRS	L6	440	fuel with (formic adj acid)	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT

	Type	L #	Hits	Search Text	DBs
7	BRS	L7	25	3 and 6	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT
8	BRS	L8	8	4 and 7	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT
9	BRS	L9	2681	7 (concentration with (formic adj. acid))	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT

	Type	L #	Hits	Search Text	DBs
10	BRS	L10	4	7 and (concentration with (formic adj acid))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT
11	BRS	L14	2660	(concentration with (formic adj acid))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT
12	BRS	L16	17	15 and "429"/\$.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT

	Type	L #	Hits	Search Text	DBs
13	BRS	L15	86	14 and (fuel adj cell)	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT
14	BRS	L17	1	"5904740".pn. and (solid adj polymer)	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT
15	BRS	L18	1	(palladium adj nano\$1particle) same (fuel adj cell)	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT

	Type	L #	Hits	Search Text	DBs
16	BRS	L19	3	(palladium adj nano\$1particle) and (fuel adj cell)	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWE NT

L2 ANSWER 1 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

AB A direct **org. fuel cell** includes a fluid fuel comprising **formic acid**, an anode having an electrocatalyst comprising palladium nanoparticles, a fluid oxidant, a cathode elec. connected to the anode, and an electrolyte interposed between the anode and the cathode.

ACCESSION NUMBER: 2005:546979 CAPLUS  
DOCUMENT NUMBER: 143:81111  
TITLE: Fuel cells using palladium-based electrocatalysts  
INVENTOR(S): Masel, Richard I.; Zhu, Yimin; Larsen, Robert T.  
PATENT ASSIGNEE(S): The Board of Trustees of the University of Illinois, USA  
SOURCE: U.S. Pat. Appl. Publ., 12 pp., Cont.-in-part of U.S. Ser. No. 407,385.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 4  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005136309	A1	20050623	US 2004-817361	20040402
US 2003198852	A1	20031023	US 2003-407385	20030404
WO 2005081706	A2	20050909	WO 2004-US37109	20041105
WO 2005081706	C2	20051027		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
WO 2005048379	A2	20050526	WO 2004-US38251	20041110
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
PRIORITY APPLN. INFO.:	US 2002-369992P P 20020404 US 2003-407385 A2 20030404 US 2003-519095P P 20031112 US 2003-664772 A 20030917 US 2004-817361 A2 20040402			

L2 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

AB A direct **org. fuel cell** includes a fluid fuel comprising **formic acid**, an anode having an electrocatalyst comprising palladium nanoparticles, a fluid oxidant, a cathode elec. connected to the anode, and an electrolyte interposed between the anode and the cathode.

ACCESSION NUMBER: 2005:451705 CAPLUS  
DOCUMENT NUMBER: 142:484850  
TITLE: Improved palladium-based electrocatalysts and fuel cells employing such electrocatalysts  
INVENTOR(S): Masel, Richard I.; Zhu, Yimin; Larsen, Robert T.  
PATENT ASSIGNEE(S): The Board of Trustees of the University of Illinois,

SOURCE: USA  
PCT Int. Appl., 31 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 4  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005048379	A2	20050526	WO 2004-US38251	20041110
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2005136309	A1	20050623	US 2004-817361	20040402
PRIORITY APPLN. INFO.:			US 2002-369992P	P 20020404
			US 2003-519095P	P 20031112
			US 2004-817361	A2 20040402
			US 2003-407385	A2 20030404

L2 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN  
AB The invention concerns a fuel cell and method using the same. The fuel cell comprises a membrane electrode assembly, the membrane electrode assembly comprising a proton exchange membrane having a front face and a rear face. An anode is coupled to the front face of the proton exchange membrane, and a cathode is coupled to the rear face of the proton exchange membrane. A vapor diffusion chamber is positioned in the front of the anode, and a vapor transport member is positioned in front of the vapor diffusion chamber. The vapor transport member is substantially impermeable to an organic fuel/water mixture in a liquid phase but is permeable to the organic fuel/water mixture in a vapor phase. In operation, a liquid fuel mixture delivered to the vapor transport member evaps. from the vapor transport member and is delivered to the anode in vapor form.

ACCESSION NUMBER: 2004:924784 CAPLUS  
DOCUMENT NUMBER: 141:382166  
TITLE: Direct **organic fuel cell**  
having a vapor transport member  
INVENTOR(S): Cropley, Cecelia C.; Stone, Simon G.  
PATENT ASSIGNEE(S): Giner Electro Chemical Systems, LLC, USA  
SOURCE: U.S., 21 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6811905	B1	20041102	US 2002-153065	20020521
PRIORITY APPLN. INFO.:			US 2002-153065	20020521
REFERENCE COUNT:	7	THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L2 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN  
AB A passive direct **org. fuel cell** includes an organic fuel solution and is operative to produce at least 15 mW/cm<sup>2</sup> when operating at room temperature. In addnl. aspects of the invention, fuel cells can include a gas remover configured to promote circulation of an organic fuel solution when gas passes through the solution, a modified carbon cloth, one or more sealants, and a replaceable fuel cartridge.



ACCESSION NUMBER: 2004:490319 CAPLUS  
 DOCUMENT NUMBER: 141:40694  
 TITLE: Organic passive direct fuel cells  
 INVENTOR(S): Masel, Richard I.; Ha, Su; Adams, Brian  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 17 pp., Cont.-in-part of U.S. Ser. No. 407,385.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 4  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004115518	A1	20040617	US 2003-664772	20030917
US 2003198852	A1	20031023	US 2003-407385	20030404
WO 2005029609	A2	20050331	WO 2004-US29542	20040909
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
WO 2005081706	A2	20050909	WO 2004-US37109	20041105
WO 2005081706	C2	20051027		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRIORITY APPLN. INFO.:			US 2002-369992P	P 20020404
			US 2003-407385	A2 20030404
			US 2003-664772	A2 20030917
			US 2003-519095P	P 20031112
			US 2004-817361	A2 20040402

L2 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

AB A direct **org. fuel cell** includes an anode within an anode enclosure, solid polymer electrolyte, and gas diffusion cathode within a cathode enclosure. An elec. load is connected between the anode and cathode via elec. linkage. A liquid fuel comprising between about 10% and 95% by weight **formic acid** is supplied to the anode enclosure. Oxidant is supplied to the cathode enclosure. Gas removal ports are provided to remove carbon dioxide and water from the fuel cell.

ACCESSION NUMBER: 2003:837510 CAPLUS  
 DOCUMENT NUMBER: 139:326099  
 TITLE: Fuel cells and fuel cells catalysts  
 INVENTOR(S): Masel, Richard I.; Rice, Cynthia A.; Waszczuk, Piotr; Wieckowski, Andrzej  
 PATENT ASSIGNEE(S): The Board of Trustees of the University of Illinois, USA  
 SOURCE: PCT Int. Appl., 52 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003088402	A1	20031023	WO 2003-US10660	20030404
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2003221669	A1	20031027	AU 2003-221669	20030404
GB 2401987	A1	20041124	GB 2004-21457	20030404
JP 2005522015	T2	20050721	JP 2003-585217	20030404
PRIORITY APPLN. INFO.:			US 2002-369992P	P 20020404
			WO 2003-US10660	W 20030404
REFERENCE COUNT:	2	THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L2 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

AB The present invention provides improved, low-cost fuel cells having reduced fuel crossover, reduced sensitivity to metal ion impurities and ability to operate under a broad range of temps. Addnl., new effective organic fuels are described for use in such fuel cells. The invention further provides improved methods for catalyst preparation and a new integrated flow field system for use in H2/O2 fuel cells.

ACCESSION NUMBER: 2002:941829 CAPLUS

DOCUMENT NUMBER: 138:6489

TITLE: Fuel cell with proton conducting membrane

INVENTOR(S): Peled, Emanuel; Duvdevani, Tair; Melman, Avi; Aharon, Adi

PATENT ASSIGNEE(S): Ramot University Authority for Applied Research & Industrial Development Ltd., Israel

SOURCE: U.S., 21 pp., Cont. of U.S. Ser. No. 484,267.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6492047	B1	20021210	US 2000-604297	20000626
US 6447943	B1	20020910	US 2000-484267	20000118
CA 2397536	AA	20010726	CA 2001-2397536	20010118
CA 2397568	AA	20010726	CA 2001-2397568	20010118
WO 2001054220	A2	20010726	WO 2001-IL54	20010118
WO 2001054220	A3	20020808		
WO 2001054220	C1	20030213		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
WO 2001054216	A2	20010726	WO 2001-IL55	20010118
WO 2001054216	A3	20020221		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,			

LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,  
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,  
YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 2001027021 A5 20010731 AU 2001-27021 20010118  
AU 2001027022 A5 20010731 AU 2001-27022 20010118  
EP 1249052 A2 20021016 EP 2001-901354 20010118  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
EP 1249053 A2 20021016 EP 2001-901355 20010118  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
JP 2003520412 T2 20030702 JP 2001-553606 20010118  
JP 2003520413 T2 20030702 JP 2001-553610 20010118  
RU 2262161 C2 20051010 RU 2002-122086 20010118

PRIORITY APPLN. INFO.:

US 2000-484267 A2 20000118  
US 2000-604297 A 20000626  
WO 2001-IL54 W 20010118  
WO 2001-IL55 W 20010118

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

AB A method of operating a fuel cell comprises supplying O to a cathode of  
the fuel cell and supplying a gaseous or vapor mixture of spent anode gas  
and replacement fuel to an anode of the fuel cell. The mixture comprises at  
least substantially 70 volume% of spent anode gas, the fuel being capable of  
reacting with O ions and providing electrons to create elec. current,  
forming the gaseous or vapor mixture comprising the fuel and spent anode  
gas. The fuel cell provides aforesaid spent anode gas as gaseous exhaust  
from the anode, and the spent anode gas comprises CO2.

ACCESSION NUMBER: 2002:509450 CAPLUS  
DOCUMENT NUMBER: 137:35469  
TITLE: Fuel cell operation  
INVENTOR(S): Kendall, Kevin; Saunders, Gary John  
PATENT ASSIGNEE(S): Adelan Limited, UK  
SOURCE: Brit. UK Pat. Appl., 25 pp.  
CODEN: BAXXDU  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2366070	A1	20020227	GB 2000-20478	20000819
WO 2002017424	A1	20020228	WO 2001-GB2815	20010625
W:			AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AZ, BY, KG, KZ, MD, RU, TJ, TM	
RW:			GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG	
AU 2001066162	A5	20020304	AU 2001-66162	20010625
EP 1312130	A1	20030521	EP 2001-943624	20010625
R:			AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR	
JP 2004507064	A2	20040304	JP 2002-521387	20010625
US 2004191587	A1	20040930	US 2003-362221	20030703
PRIORITY APPLN. INFO.:			GB 2000-20478 A 20000819 WO 2001-GB2815 W 20010625	

L2 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN  
 AB An organic fuel, such as a MeOH/H2O mixture, is circulated past an anode of a cell while O or air is circulated past a cathode of the cell. The cell solid electrolyte membrane is preferably fabricated from Nafion. For improving the performance of C electrode structures for use in org. fuel cells, a high surface-area C particle/Teflon-binder structure is immersed in a Nafion/MeOH bath to impregnate the electrode with Nafion. For fabricating an anode for use in an org. fuel cell, metal alloys are electrodeposited onto the electrode in a solution containing perfluorooctanesulfonic acid. A fuel additive containing perfluorooctanesulfonic acid is used with fuel cells employing a H2SO4 electrolyte. The organic fuel is selected from MeOH, HCHO, HCO2H, dimethoxymethane, trimethoxymethane, and trioxane.

ACCESSION NUMBER: 1997:124876 CAPLUS  
 DOCUMENT NUMBER: 126:214429  
 TITLE: Aqueous liquid feed organic fuel cell using solid polymer electrolyte membrane  
 INVENTOR(S): Surampudi, Subbarao; Narayanan, Sekharipuram R.; Vamos, Eugene; Frank, Harvey A.; Halpert, Gerald; Olah, George A.; Prakash, G. K. Surya  
 PATENT ASSIGNEE(S): California Institute of Technology, USA; University of Southern California  
 SOURCE: U.S., 26 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5599638	A	19970204	US 1993-135007	19931012
US 6248460	B1	20010619	US 1995-478801	19950607
IL 115867	A1	19990620	IL 1995-115867	19951103
IL 127662	A1	20000831	IL 1995-127662	19951103
US 5773162	A	19980630	US 1995-569452	19951208
US 6146781	A	20001114	US 1998-6846	19980114
US 6589684	B1	20030708	US 1999-430583	19991029
US 6303244	B1	20011016	US 1999-433802	19991103
US 6420059	B1	20020716	US 1999-434850	19991104
US 6265093	B1	20010724	US 1999-437997	19991110
US 2002015872	A1	20020207	US 2001-881222	20010613
US 6740434	B2	20040525		
US 2002015868	A1	20020207	US 2001-881309	20010613
US 6821659	B2	20041123		
US 2001050230	A1	20011213	US 2001-894022	20010627
US 6703150	B2	20040309		
US 2005003254	A1	20050106	US 2004-797625	20040309
US 2004224214	A1	20041111	US 2004-857587	20040527
US 2005042487	A1	20050224	US 2004-930505	20040830
PRIORITY APPLN. INFO.:			US 1993-135007	A1 19931012
			US 1995-478001	A2 19950607
			US 1995-478801	A2 19950607
			IL 1995-115867	A3 19951103
			US 1995-569452	A 19951208
			US 1998-6846	A3 19980114
			US 1999-437331	A1 19991109
			US 2001-881309	A1 20010613
			US 2001-894022	A1 20010627
			US 2004-797625	A1 20040309

L2 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN  
 AB The fuel cells is operated by circulating an organic fuel essentially free of an acid electrolyte, such as a MeOH/water mixture, past the cell anode while O or air is circulated past the cathode. The cell electrolyte membrane is preferably made of Nafion. The C electrode structures are prepared by immersing a high surface area C particle-Teflon binder structure with

Nafion in a MeOH bath. The anode for the fuel cells have a metal alloy deposited onto the C electrode structure from a solution containing perfluorooctanesulfonic acid. A fuel additive containing this acid and a new organic fuels are also described.

ACCESSION NUMBER: 1996:386128 CAPLUS  
DOCUMENT NUMBER: 125:38045  
TITLE: **Organic fuel cells, and**  
method of operation the cells and manufacture of  
electrode therefor  
INVENTOR(S): Surampudi, Subbarao; Narayanan, Sekharipuram R.;  
Vamos, Eugene; Frank, Harvey A.; Halpert, Gerald;  
Olah, George A.; Prakash, G. K. Surya  
PATENT ASSIGNEE(S): University of Southern California, USA; California  
Institute of Technology  
SOURCE: PCT Int. Appl., 72 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9612317	A1	19960425	WO 1994-US11911	19941018
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, UZ, VN				
RW: KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2203153	AA	19960425	CA 1994-2203153	19941018
AU 9481219	A1	19960506	AU 1994-81219	19941018
AU 716164	B2	20000217		
BR 9408623	A	19970916	BR 1994-8623	19941018
CN 1167544	A	19971210	CN 1994-195212	19941018
JP 10507572	T2	19980721	JP 1994-513186	19941018
EP 1291950	A2	20030312	EP 2002-25417	19941018
EP 1291950	A3	20050720		
R: DE, ES, FR, GB, IT, NL, SE				
EP 1489674	A2	20041222	EP 2004-19940	19941018
EP 1489674	A3	20050112		
R: DE, ES, FR, GB, IT, NL, SE				
EP 1489676	A2	20041222	EP 2004-19941	19941018
EP 1489676	A3	20050525		
R: DE, ES, FR, GB, IT, NL, SE				
EP 1498972	A2	20050119	EP 2004-19942	19941018
EP 1498972	A3	20050202		
R: DE, ES, FR, GB, IT, NL, SE				
EP 1498973	A1	20050119	EP 2004-19944	19941018
R: DE, ES, FR, GB, IT, NL, SE				
EP 1498975	A2	20050119	EP 2004-19945	19941018
EP 1498975	A3	20050126		
R: DE, ES, FR, GB, IT, NL, SE				
EP 1507303	A1	20050216	EP 2004-19943	19941018
R: DE, ES, FR, GB, IT, NL, SE				
EP 1507304	A1	20050216	EP 2004-19948	19941018
R: DE, ES, FR, GB, IT, NL, SE				
EP 1508930	A1	20050223	EP 2004-19946	19941018
R: DE, ES, FR, GB, IT, NL, SE				
EP 1508931	A1	20050223	EP 2004-19947	19941018
R: DE, ES, FR, GB, IT, NL, SE				
EP 1519432	A2	20050330	EP 2004-19949	19941018
EP 1519432	A3	20050713		
R: DE, ES, FR, GB, IT, NL, SE				
EP 755576	A1	19970129	EP 1995-900379	19960425
R: DE, ES, FR, GB, IT, NL, SE				
AU 9963162	A1	20000217	AU 1999-63162	19991206

^AU 744342	B2	20020221		
CN 1411087	A	20030416	CN 2001-135489	20011010
PRIORITY APPLN. INFO.:			WO 1994-US11911	A 19941018
			EP 1995-900379	A3 19960425

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AB The oxidation of **formic acid** on thin, epitaxially-grown Pd overlayers on Au and Pt single crystal electrodes was studied as a function of overlayer thickness ranging from submonolayer coverages up to the equivalent of 10 monolayers. The results were compared with those for massive Pd single crystal surfaces. The electrocatalytic properties of the Pd overlayers depend markedly on their thickness and on their crystallog. orientation. Pd(100) showed the highest catalytic activity of all three low-index faces, and Pd films on Pt(hkl), even when two or three layers thick, generally exhibited a much higher activity than Pd films on Au(hkl) or massive Pd(hkl). In all cases a high resistivity of the Pd surfaces against poisoning by CO was observed, which makes Pd an interesting alternative to the often quickly deactivated Pt as catalyst for **org. fuel cell** reactions.

ACCESSION NUMBER: 1996:350238 CAPLUS  
DOCUMENT NUMBER: 125:20984  
TITLE: **Formic Acid** Oxidation on Ultrathin  
Pd Films on Au(hlk) and Pt(hkl) Electrodes  
AUTHOR(S): Baldauf, M.; Kolb, D. M.  
CORPORATE SOURCE: Department of Electrochemistry, University of Ulm,  
Ulm, D-89069, Germany  
SOURCE: Journal of Physical Chemistry (1996), 100(27),  
11375-11381  
CODEN: JPCHAX; ISSN: 0022-3654  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

L2 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

AB The practical application of the electrocatalysis by Sn ad-atoms to anodes for **org. fuel cells** was studied. A simplified and versatile preparation method of the electrode having high sp. surface area Pt with a well-defined Sn coverage was developed. It consists of undervoltage deposition of ad-atoms and subsequent anodic treatment resulting in uniform dispersion of the ad-atoms over all the Pt clusters in the catalyst layer of the electrode. The resulting electrode exhibits enhancement effects in the specific activity over the pure Pt black electrode by a factor of 100 for oxidation of MeOH, of more than 1000 for oxidation of HCHO and of 250 for oxidation of HCO<sub>2</sub>H, resp. This method has the advantage that a much higher sp. surface area of catalyst is obtained, as well as an optimum composition, compared with the electrochem. co-deposition or immersion methods proposed previously.

ACCESSION NUMBER: 1985:568594 CAPLUS  
DOCUMENT NUMBER: 103:168594  
TITLE: Electrocatalysis by ad-atoms. Part XIII. Preparation  
of ad-electrodes with tin ad-atoms for methanol,  
formaldehyde and **formic acid** fuel  
cells  
AUTHOR(S): Watanabe, M.; Furuuchi, Y.; Motoo, S.  
CORPORATE SOURCE: Fac. Eng., Yamaguchi Univ., Kofu, Japan  
SOURCE: Journal of Electroanalytical Chemistry and Interfacial  
Electrochemistry (1985), 191(2), 367-75  
CODEN: JEIEBC; ISSN: 0022-0728  
DOCUMENT TYPE: Journal  
LANGUAGE: English

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(FILE 'HOME' ENTERED AT 10:51:42 ON 05 APR 2006)

FILE 'CAPLUS' ENTERED AT 10:51:58 ON 05 APR 2006

L1 33 S ORGANIC FUEL CELL

L2 11 S L1 AND (FORMIC ACID)